

Exhibit 1

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

SINGULAR COMPUTING LLC,)
)
Plaintiff,)
)
vs.) Case Nos.
) 1:19-cv-12551-FDS
GOOGLE LLC,)
)
Defendant.)
)

REMOTE VIDEO DEPOSITION OF
DR. SUNIL P. KHATRI

DATE TAKEN: MARCH 23, 2023
REPORTED BY: RENEE HARRIS, CSR 14168, CCR, RPR
JOB NO. 5805108
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to describe it in any further detail,
especially because this is an infringement
report, not a report on the details of the
patent.

So it -- my report just described the 03:23:20
patent briefly. For example, if you look
at -- it talks about the patents in -- trying
to remember where I wrote that part.

So the patents are described in just a
brief manner because the patents speak for 03:24:06
themselves. I didn't need -- see a need to
be elaborating profusely on the patents.

But my -- my brief description of the
patents is -- is on -- it starts on page 12.
And -- and it's basically about three pages. 03:24:21
It ends in the middle of page 14.

Again, because -- because the patents
speak for themselves and this is -- this is
an infringement report, I didn't see a need
to be focusing extensively and profusely on 03:24:38
the details of the patent.

BY MR. BHANSALI:

Q. Is it your understanding that the
specification of the patents teaches that a
processing element is a tangible object? 03:24:54

MR. SEEVE: Objection. Vague and

ambiguous.

THE WITNESS: Can you repeat the

question?

BY MR. BHANSALI:

03:25:03

Q. Does the specification of the

patents-in-suit teach that a processing element is

a tangible object?

MR. SEEVE: Objection. Vague and

ambiguous. Calls for a legal conclusion.

03:25:12

THE WITNESS: So I don't know the

connotation of the word, quote/unquote,

"tangible object" in a legal sense. So I'm

hesitant to answer it because I'm not a legal

expert.

03:25:27

So if the word, quote/unquote, legal --

I'm sorry, "tangible object" has some

specific, you know, legal meaning, I'm

unaware of it, and I'm -- you know, my answer

is not -- it should not be construed in a

03:25:38

legal sense, of course, because I'm not a

legal expert.

But that said, there's ample disclosure

in the patent that the processing element is

a circuit. There's -- there's a lot of

03:25:58

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description about that, and there's figures devoted to it. There's text devoted to it, and some of that text we've been discussing when we were looking at Column 11.

And if I look further at the patent, I'm sure I'll find much more text. 03:26:14

I'm looking at the patent briefly as we speak, and there's a great deal of disclosure about processing element. There's also figures and such. 03:26:26

Now, and the patent, you know, teaches hardware. So this is basically, you know, the processing element is a hardware object. It is actually a circuit.

In fact, the figure that we were discussing some time ago, the Figure 4, described circuit elements, circuit elements comprising the -- the processing element. 03:26:39

So to me, and also to a person of ordinary skill in the art, when they read the patent and they read the disclosure and the figures -- this would be, I guess, Figures 1, 2, 3, 4, at least; I'm just eyeballing these real quick -- the first four figures, even Figure 6, and then also, you know, much of 03:26:56 03:27:16

the specification of the patent, including the paragraphs that we discussed in some detail, which were in columns 11, all of these to a person of ordinary skill in the art would suggest that the processing element is -- is a circuit, is a -- you know, it's a physical circuit. 03:27:30

And to a person -- you know, to a person who is an electrical engineer, they would know that this is basically -- this is describing a circuit that's -- you know, that's -- that's a concrete circuit. 03:27:44

And, again, I don't know if the word "concrete" has legal connotations, but I mean this in the sense of, you know, a distinct circuit, is what I mean. 03:27:58

BY MR. BHANSALI:

Q. When you say "concrete," you mean an actual physical circuit?

MR. SEEVE: Objection. 03:28:08

THE WITNESS: At least -- again --

MR. SEEVE: I'm sorry.

THE WITNESS: Sorry.

MR. SEEVE: Objection. That's all I'll say. 03:28:17

THE WITNESS: I think there's a gap in
the audio.

But can I ask you to repeat the question,
please.

BY MR. BHANSALI:

03:28:26

Q. Let me ask a different question.

So you gave a long answer, and my
question is: Do you agree that the circuit that
you describe the processing element as comprising
has to be a tangible -- tangible, physical
circuit?

03:28:45

MR. SEEVE: Objection. Vague and
ambiguous. Calls for a legal conclusion.

THE WITNESS: That was your question to
start with; correct? And you're asking the
same question again? Is that correct?

03:28:56

BY MR. BHANSALI:

Q. No. I'm asking a slightly different
question.

A. Okay. Then maybe -- let me hear it
carefully. Sorry.

03:29:02

Q. Okay. Do you agree that the circuit that
you say the processing element comprises has to be
a tangible, physical circuit?

MR. SEEVE: Objection. Mischaracterizes

03:29:19

the report. Vague and ambiguous.

THE WITNESS: Okay. Excuse me.

So as I said earlier, if there are legal connotations to the word "tangible" or the word "physical" in -- in law, I would be 03:29:35
unaware of them, and therefore I'd be hesitant to use that language.

But what I would basically say, which I've been saying, is that in the specification of the patent, in the 03:29:50
disclosures of the patent, in figures as well as in multiple, you know, paragraphs in the specification, some of which we've discussed, you know, in this deposition, including those paragraphs in -- you know, in -- in Column 03:30:08
11, a person of ordinary skill in the art, looking at these figures, looking at this disclosure, looking at these paragraphs, would understand a PE, or the processing element, to be a digital circuit, to be a 03:30:25
circuit which has, you know -- you know, the components described because -- you know, because the disclosure describes it as a digital circuit.

It describes the circuit with components 03:30:39

in it which a person of ordinary skill in the art would readily understand to be digital circuit components.

So a person of ordinary skill in the art would -- reading this, reading the patent and reading the -- and looking at the figures would readily understand that a PE is taught to be a circuit. 03:30:50

BY MR. BHANSALI:

Q. And can that circuit be implemented in software? 03:31:04

MR. SEEVE: Objection. Calls for a legal conclusion. Vague and ambiguous.

THE WITNESS: You know, a circuit by definition is a hardware entity. A circuit is something that -- you know, a circuit is something that, you know, especially -- sorry. 03:31:16

When you -- when you read the disclosure of the -- of the patent, a person of ordinary skill in the art would clearly understand that what is disclosed, you know, is -- is -- is not software, but what is disclosed is a -- is a hardware circuit, is a hardware, you know, processing element; that -- that, 03:31:29 03:31:49

you know, pages of -- pages and pages of this disclosure make it clear that that -- that what's described is a hardware circuit.

BY MR. BHANSALI:

Q. And hardware has a physical form; 03:32:00
correct?

MR. SEEVE: Objection. Vague and ambiguous.

THE WITNESS: Again, as taught, the circuit that is described here would be 03:32:10
implemented. And I think there's also some disclosure about the different ways that it could be implemented and also a comparison of the -- you know, of the teaching of the patent with existing methods that people used 03:32:23
to design -- you know, to design this hardware.

So there's a description about, you know -- for example, if you look at the "Detailed Description," paragraph 3 -- sorry, 03:32:37
Column 3, it talks about CPU chips and CPU chips that were designed before -- before the idea that was taught in the patent.

So a person of ordinary skill in the art, reading this, would understand that a CPU 03:32:52

chip is a hardware circuit, and what's being taught is a better way to implement that, which means a better hardware circuit.

BY MR. BHANSALI:

Q. And my question, sir, was whether hardware has a physical form. 03:33:02

As you use the term "hardware," does that have to have a physical form?

MR. SEEVE: Objection. Vague and ambiguous. 03:33:14

THE WITNESS: So I'm -- again, I don't know if there's a -- the word "physical" has some legal meaning. But, for example, when we talk about a CPU or a chip or a -- or a circuit, these are typically implemented using -- you know, using -- using transistors, using, like, something -- using MOSFETs or, you know -- or different kinds of transistors and -- and -- and circuits. 03:33:28

So this is basically a circuit realization. So this is not just a concept, but it's more than a concept. It a hardware circuit that implements a certain function. 03:33:51

BY MR. BHANSALI:

Q. And does hardware have to be physical or 03:34:03

1 tangible? You've used the word "hardware." I'm
2 just asking whether the word, as you're using it,
3 has to be something that's physical or tangible.

4 MR. SEEVE: Objection. Vague and
5 ambiguous. 03:34:15

6 THE WITNESS: Again, like I said, I'm
7 not -- I'm not a lawyer and I don't know if
8 the word "tangible" has some legal
9 ramifications or legal connotations.

10 And to the extent that -- to the extent 03:34:26
11 that I -- that I give you an answer, I want
12 to let -- I want it known that I'm not giving
13 this from a legal -- I'm not giving any legal
14 opinion because I don't have a legal opinion.
15 I'm not a -- I'm not a lawyer. I'm not 03:34:40
16 trained in the law.

17 But, you know, when -- when we design
18 hardware, when we design circuits, the
19 understanding is that these circuits will be
20 implemented in a, you know -- on some type of 03:34:57
21 substrate, which would be typically an
22 integrated circuit substrate, which would
23 then potentially be incorporated in a board,
24 in a printed circuit board or something.

25 ///

of which we have been discussing in --
earlier today, Column 11, for example. But
that's not -- that's just a subset of the
disclosure of the processing element.

So I used the processing element 03:41:09
disclosures in the patent to inform me as to
what the word "processing element," as
described in the Court's claim construction,
which you see on page 18, paragraph 85, of my
report -- you know, I used -- I used -- I 03:41:24
used the patent to inform me as to what --
you know, in the context of the patent, what
the term "processing element" would mean.

BY MR. BHANSALI:

Q. Okay. And my question is that 03:41:37
understanding -- did that understanding include
that the processing element is a tangible piece of
hardware?

MR. SEEVE: Objection. Vague and
ambiguous. Asked and answered. 03:41:50

THE WITNESS: So, you know -- you know,
my understanding, based on reading the
patent, was that a processing element -- and
I'm -- is literally what is described in the
Court's claim construction, which is -- 03:42:04

1 sorry, an execution unit. I'll start again.

2 In my understanding of the word
3 "execution unit," I applied the Court's claim
4 construction, which is a processing element
5 comprising an arithmetic circuit paired with 03:42:17
6 a memory circuit.

7 Now, in that understanding, I didn't,
8 again, inject, you know -- you know, more
9 language, whether this is a physical -- I
10 didn't inject language like whether it's 03:42:33
11 physical or whether it is, as you said,
12 tangible, earlier.

13 I didn't -- I remain and I remained
14 faithful to the Court's claim construction
15 language, you know, in -- in the Court's 03:42:47
16 claim construction for execution unit.

17 May I request a break.

18 MR. BHANSALI: I was actually just going
19 to suggest that, Dr. Khatri, because I was
20 about to move to a different topic, and you 03:43:01
21 had requested breaks every 45 minutes or so.
22 I was going to suggest that.

23 THE VIDEOGRAPHER: Going off the record.
24 The time is 3:43.

25 (Short break taken.) 03:59:10